DOCKET FILE COPY ORIGINAL

KING COUNTY FIRE PROTECTION DISTRICT 10

May 25, 1993

Doron Fertig
Federal Communications Commisssion
1919 M Street NW, #5202
Washington DC, 20554

King County Fire District 10, a progressively managed Fire Department, is pleased to present this response to Docket 92--235.

BACKGROUND

King County Fire District 10 occupies 165 square miles of area just east

VISION

Review of the NPRM makes evident the need for a Vision of what the future should look like.

We envision a territory wide fire radio system designed to be spectrum efficient and at the same time allow for growth. This would likely be state wide and include areas into the fringes of Oregon and Idaho. We would hope that the adjacent states would follow suit.

We envision operating a few of the VHF frequencies to provide conventional regional coverage on which regional dispatch centers would provide dispatch service. Some of the frequencies would be used for simplex fireground operations. Most of the frequencies would be used in a trunked system and handle most of the routine daily communications.

INNOVATIVE USES

We acknowledge the need for innovative uses of the spectrum in an effort to achieve efficiency. We urge the FCC to allow for not only innovative technical systems but also for innovative inter-service uses.

Public Safety, and in particular the Fire Service, needs ample spectrum to operate during times of disaster. One of two conditions now exist. Either the department's system is just the right size for day-to-day operations, in which case it is overloaded during a disaster, or the system is oversized with spectrum sitting idle waiting for a disaster. Both are not good alternatives.

We would likely propose to build a much larger system than required in our day-to-day operations and use the trunked portion of that system to provide service to business users in an SMR fashion. During the disaster period we would begin to limit business use to fewer channels as required to accommodate the disaster efforts.

This will create a WIN WIN WIN scenario. Business gets the spectrum it needs for its daily operations, public safety has spectrum available for disaster use, and spectrum is not sitting idle. The expanded system is exercised by the business users and the revenue from the business users goes to defray the costs of operating the system.

SERVICE DELIVERY

IMPORTANT: We believe that within the US in excess of 65% of the firefighters are alerted by paging in one form or another. This is an absolute requirement. (We also estimate that up to 70% of the firefighters may be volunteers.) We cannot envision any other method of alerting that will allow for the personal mobility firefighters require when not involved in suppression activities.

The FCC has acknowledged the need to maintain intact the BANDWIDTH and ERP of the Commercial Paging channels (see proposed 88.1061 and 88.1067). The exact same conditions exist for fire service paging operations.

THE PAGING CAPABILITIES NEEDED BY THE FIRE RADIO SERVICE MUST BE KEPT INTACT. We, the FCC and the District, cannot degrade the level of service provided to the public we serve. Degradation of service cannot be justified for any reason.

While digital paging is an excellent method of transmitting information for most applications. It is NOT a universal replacement for voice paging. The driver of a fire engine cannot look away from the road to look at a digital pager. Thus, voice is the solution.

The new rules MUST allow for voice transmission of the nature and location for the alarm. This often takes up to 45 seconds.

The 2 second message length proposed in 88.1559 is NOT TOLERABLE.

LOADING and SEPARATION

The docket indicates that a 50 mile separation between base stations is proposed. We strongly urge the FCC to consider a significantly greater separation between EUO systems. In 88.215C Table B2 you address the problems of terrain requiring greater separation. A similar but aggravated problem exists at 150MHz and MUST be resolved.

We URGE the FCC to consider service contours for Public Safety.

EUO wide area systems are proposed to meet loading criteria based on coverage of 50 miles per base station. This assumes circular concentric propagation.

Real world propagation in our rugged terrain is not concentric circles, in fact it's rather oblong. We ask the FCC to allow for this during loading calculations.

We agree that a loading of 50 mobiles per channel in the dense areas is appropriate. We urge that there be consideration given to the fact that the density is not homogeneous and does not simply go to rural at 50 miles. A TRANSITION ZONE EXISTS AND MUST BE CONSIDERED.

As we stated earlier, our coverage area is about 1,700 square miles. We have the somewhat unique position of serving the interface area between urban and rural. Thus, we could be forced to the urban loading criteria for exclusivity due to the fact that we are near an urban area even though we service suburban and rural densities.

As a dispatch center we dispatch over 200 mobile units and 400 pagers. We cover about 1,700 square miles. Using some simple math it might take 11 base stations to cover this area adequately. Thus we would need to have in excess of 550 mobiles to qualify for exclusivity of one channel, should base station count be used. A dense city could qualify for 4 channels with only 200 mobiles. THIS INEQUITY MUST BE RESOLVED.

The proposed rule making must consider the plight of the suburban/rural fire departments. They need exclusivity too.

REMEMBER THAT IN OUR MOUNTAINOUS TERRAIN PROPAGATION IS RADICALLY DIFFERENT THAT IN THE FLATLANDS. The NPRM should be written to enhance our operations and not degrade them.

IMPLEMENTATION

We urge the FCC to consider 10 or 15 year license terms for Public Safety.

The FCC proposes in 88.473a1 that mobile relay stations may be authorized in the 150MHz band. This is subject to the conditions that an EUO exist or we have concurrence. We would like to see a third condition here based on need and coordination. Mobile relays are a vital part of the rural fire radio service.

We suggest that the FCC could use the tool of type acceptance to force the manufactures to produce new technology.

We support the idea of exclusive services, such as fire, combined with a general pool of frequencies for the public safety radio service.

A long construction period and long loading period must be established. As an example; we feel 8 months to construct and load is far too short. Our budget process can take up to 18 months.

The NPRM appears to be attempting to implement a quasi cellular technology at 150MHz. We oppose that general approach.

COORDINATION

The FCC seems to be proposing that the coordinators be used to administrate exclusivity. This is an excellent proposal.

We have long admired the coordination work done by APCO. They use local coordinators that are familiar with the propagation characteristics and applications. This has consistently resulted in satisfied end-users.

We have consistently been dissatisfied with the coordination work done by the fire service coordinator.

ARCHITECTURE

We envision a matrix of EUOs that will form a regional fire radio system. Within the region we must place sufficient signal level to provide reliable pager service.

ERP LIMITATIONS, WHICH WE OPPOSE, would force us to exponentially increase the number of base stations. In turn, this would put an exponentially larger burden on Part 94 (Microwave) to connect the base stations to the control point. Thus, it seems the NPRM is moving some of the burden from Part 90 to Part 94 while at the same time driving the costs to provide service up exponentially.

MTBF, mean time between failures, would also increase. A larger number of base stations would, on a system wide basis, cause a proportional increase in the number of failures.

Under a set of SERVICE AREA CONTOURS, WHICH WE SUPPORT, we can design and construct spectrum and cost efficient systems by using higher ERP's in the center of the EUO and Directional Antennas combined with low power near the edges of the EUO.

TECHNICAL PARAMETERS

The 1996 power reductions are FAR TOO SEVERE. They will literally put us out of business. Remember that we alert our firefighters through paging. We need sufficient signal density to provide reliable pager service.

We suggest that most users could likely give up 3dB. This would need to be evaluated on a case by case basis.

We STRONGLY SUPPORT a proposal to DEEPEN THE SIGNAL CONTOURS between public safety EUOs. The proposed 10dB ratio of desired to undesired should work well for most business applications. Public Safety needs a higher ratio, more on the order of 20dB to insure the reliability needed by police and fire personnel.

Mobiles should also have signal contour and ERP limitations.

Some attention needs to be focused on channel pairing in the VHF portion of the spectrum. While some mobile only channels have been set aside these should be spaced away from base channels. This will allow for better site design and improve performance by substantially reducing transmitter side band noise cross talking into the co-located receivers and alleviate receiver desense. Note that the 806-851 split works excellent and the 5MHz split at 450 works well. We suggest that the public safety channels suggested for mobile only in the 158/159 area should be protected from base operations by surrounding them with mobile only channels in other services. We would then use the 154/155 area for mobile relay outputs and car-to-car operations.

We believe that we can successfully adjust our transmitters to lower deviation in 1996 but, we have two comments: 1.) The adjustment required must also have relief from type acceptance. 2.) The adjustment will to some degree degrade our signal to noise ratio. We believe this may be tolerable. This would not be tolerable in the midst of significant power reductions.

We would like to see a category for mixed emissions (88.409B) that would allow for mixed data and voice and that data call signs be allowed in this environment.

Can the Manufacture's obtain the 5KHz tight spacing suggested? They are expressing to us reservations about their ability to actually produce a product that will meet the FCC's intent.

A downtilt exception might be built into the ERP limitations to consider power delivered at the edge of the next EUO.

CTCSS is becoming out dated, and while we agree it works well for Mobile Relay control, we suggest that other similar methods offered by data be allowed.

We agree that trunked operations should be encouraged and primary but should not required exclusively.

LACK OF RESPONSE

We urge the FCC to look sternly at the lack of response. Only 120 comments compared to your license base is infinitesimally small and in no way could be construed to represent accurately the opinion of the majority.

We suggest that lack of response is due to three factors. First, most of the license base is unaware of the NPRM. Second, those few that have heard "something" of this are unqualified to understand the ramifications. Third, most licensees are technically not competent to respond on their own and cannot afford to hire a consultant to respond.

We also suggest that the FCC look at the demographics of those responding in an effort to determine the true opinions of those who are users of your spectrum Vs those who stand to profit significantly from the users inability to respond.

BROAD COMMENTS

We comment that 5 groups of 50 channel pair might better serve the public interest at 10 groups of 25 channel pair. Growth could then take an organization from 25 to 50 channels.

We applaud the efforts to create more available channels and in general we support the creation of more channels through spectrum efficient refarming.

CONSIDER THIS: We as the Fire Radio Service must deliver quality reliable communications to our service areas. We must do this in whatever environment the FCC mandates. While we agree that reducing occupied bandwidth will create more spectrum, we disagree that drastically reduced ERP will create more spectrum. We submit that it will only result in the installation of more infrastructure to obtain the same quality of communications offered by Part 90. This will not create more channels.

Our need to provide service does not change. We cannot provide a lesser service. We can provide a more efficient service.

We strongly support service area contours. This allows for engineering.

We strongly protest drastic ERP limitations. This mandates inefficiency.

We oppose commercial SMR expansion into public safety or non-commercial channels.

The Grandfathering wording of 88.1551 allows of indefinite operations under the existing authorizations. Then 88.1555 through 88.1563 seem to effectively irradiate the meaning of 88.1551. This needs to be made more clear.

SUMMARY

We agree with the FCC, more channels are needed in the spectrum allotted.

We support changes that lead to Spectrum Efficiency through narrower bandwidths.

We STRONGLY OPPOSE DRASTIC ERP REDUCTIONS.

We SUPPORT SERVICE AREA CONTOURS.

We support changes that lead to efficient exclusive use in the fire radio service.

Document Prepared by: Robert O'Hara